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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,591	02/04/2004	John M. Hayden	10830.0102.N	3791
27927 7590 11/14/2007 RICHARD AUCHTERLONIE NOVAK DRUCE & QUIGG, LLP 1000 LOUISIANA 53RD FLOOR HOUSTON, TX 77002			EXAMINER LOHN, JOSHUA A	
			ART UNIT 2114	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/771,591

Applicant(s)

HAYDEN ET AL.

Examiner

Joshua A. Lohn

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14,21-33,42 and 43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 6,11-14,26 and 31-33 is/are allowed.
- 6) ☒ Claim(s) 1-5,7-10,21-25,27-30,42 and 43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION***Response to Arguments***

Applicant's arguments filed 9/6/2007 have been fully considered but they are not fully persuasive.

With respect to applicant's arguments involving claims 1, 21, and 42, the examiner respectfully disagrees.

Applicant states that the claims "are directed to addressing 'problems setting up the virtual secondary server in such a way that users can immediately access data in the event of a failure on the primary server Problems with storage resources, network resources, and address conflicts may not become known until an attempted failover from the primary server to the virtual secondary server.' (Applicants' specification, page 4, lines 2-4 and 7-9)...

It is respectfully submitted that neither the problem addressed by the applicants nor their solution as recited in applicants' claims is disclosed or suggested by Witte. In applicants' claims 1, 21, and 42, there exists a secondary virtual file server including a collection of files being replicated from the primary file server to the disaster recovery site. Before switching user access over from the primary file server at the active site to the secondary virtual file server at the disaster recovery site, there is a determination of whether there are sufficient network interfaces and file system mounts at the disaster recovery site for the secondary virtual file server for providing user access at the disaster recovery site. Upon finding that there are sufficient network interfaces and file system mounts at the disaster recovery site, the network interfaces and file system mounts

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that are needed at the disaster site are reserved for providing user access at the disaster recovery site.

The examiner respectfully disagrees that Witte fails to disclose determining sufficient resources before switching over. This is disclosed in Witte col. 7, lines 52-60, where the created backup has reserved interfaces and storage. This backup was created to be able to act in failover to seamlessly assume the identity of the primary, Witte, col. 12, lines 22-28, and to do so would have required an inherent determination during the reservation of resources that sufficient resources existed to equal the primary system's resources. This determination of sufficient resources would have had to take place at some point prior to failure to allow for the correct configuration of the backup filer.

The applicant further states:

In other words, applicants are not simply claiming the instantiation of a backup vfiler when the primary filer or primary vfiler becomes unavailable. Thus, it is not clear from Witte whether the problem addressed by applicants ever occurred in Witte or was solved by Witte in the fashion as claimed by the applicants; for example, one might assume or not check that there would be sufficient resources for the secondary vfiler before user access is switched over to the disaster recovery site, or one might never operate the disaster recovery site without sufficient resources on the disaster recovery site to ensure full user access at the disaster recovery site to the secondary vfiler.

The examiner feels that the configuration of Witte sufficiently discloses a check of resources prior to the switchover, as is detailed above. The additional concern that one might never operate the disaster recover site of Witte without sufficient resources to

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ensure full user access at the secondary site, as addressed in new claim 42, is also taught by Witte. The backup filer is operated initially with only the resources required for mirroring storage being active, Witte, col. 12, lines 1-6. During this SnapMirror functionality the backup filer does not provide sufficient resources to ensure full user access since the network interfaces, while in existence, are not instantiated for use, Witte, col. 12, lines 7-18. Thus the system is operated without sufficient resources to ensure full failover, but these resources are ensured to exist for the period in which they will need to be instantiated for a failover operation.

In view of the above discussion, the examiner rejects amended claims 1 and 21 and new claim 42, and their dependents as show in the following rejection.

Applicant's arguments with respect to claims 3, 23, and 43 have been considered but are moot in view of the new ground(s) of rejection. These new grounds are necessitated by the amendments and are provided in the following rejection. The examiner agrees that Witte fails to disclose the newly claimed language, but the deficiencies are obviously made up for by the newly cited Harper reference, as is shown below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 4, 5, 7, 10, 21, 22, 24, 25, 27, 30, and 42 are rejected under 35 U.S.C. 102(e) as being anticipated by Witte et al., United States Patent number 7,143,307, filed March 15, 2002.

As per claim 1, Witte discloses *in a disaster recovery environment including a primary file server at an active site and a secondary virtual file server at a disaster recovery site remote from the active site, the secondary virtual file server including a collection of files being replicated from the primary file server to the disaster recovery site* (Witte, col. 2, lines 49-60), *the secondary virtual file server needing resources including network interfaces and file system mounts at the disaster recovery site for providing user access at the disaster recovery site* (Witte, col. 7, lines 54-60), *a method comprising:*

a) before switching user access over from the primary file server at the active site to the secondary virtual file server at the disaster recovery site, determining whether there are sufficient network interfaces and file system mounts at the disaster recovery site for the secondary virtual file server for providing user access at the disaster recovery site (Witte, col. 7, lines 47-51, where the backup filer acts as the virtual secondary file server,

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and col. 7, lines 52-60, where the created backup has reserved interfaces and storage, which is functionally equivalent to file system mounts, the reservation inherently showing determination that sufficient resources exist since the backup system was created to allow seamless failover from the primary, with the secondary assuming the primary's identity, col. 12, lines 22-30); and

b) upon finding that there are sufficient network interfaces and file system mounts at the disaster recovery site for the secondary virtual file server for providing user access at the disaster recovery site, reserving the network interfaces and file system mounts that are needed at the disaster recovery site for providing user access at the disaster recovery site (Witte, col. 8, lines 19-25, where the reserving of interfaces and mounts occurs to maintain client access during disaster recovery).

As per claim 2, Witte further discloses *the method as claimed in claim 1, wherein the primary file server is a virtual file server* (Witte, col. 7, lines 52-56, where the filers are the servers and are also virtual).

As per claim 4, Witte further discloses *the method as claimed in claim 1, which is performed when it is desired to failover user access from the active site to the disaster recovery site, and which includes performing failover of user access from the active site to the disaster recovery site after reserving the network interfaces and file system mounts that are needed at the disaster recovery site for providing user access at the disaster recovery site after failover of user access from the active site to the disaster recovery site* (Witte, col. 12, lines 21-40).

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As per claim 5, Witte further discloses *the method as claimed in claim 1, wherein user mappings are kept at the disaster recovery site so that user file access at the active site may be continued by accessing user file copies at the disaster recovery site upon failover of user access from the active site to the disaster recovery site* (Witte, col. 8, lines 1-11, where each filer includes user access mappings and these configurations are kept at the backup site, col. 11, lines 41-61).

As per claim 7, Witte further discloses *the method as claimed in claim 1, wherein user session information is kept at the disaster recovery site so that users accessing user files of the primary file server at the active site may access copies of the user files at the disaster recovery site without a need to log onto the disaster recovery site upon failover of user access from the active site to the disaster recovery site* (Witte, col. 12, lines 23-54, where the session information is maintained and the live version of data is available; the client user session need not log onto the disaster recovery site since all the access is automatically transferred).

As per claim 10, Witte further discloses *the method as claimed in claim 1, which includes the disaster recovery site producing and storing a series of snapshot copies of the secondary virtual file server, each of the snapshot copies providing a consistent state for the secondary virtual file server* (Witte, col. 7, lines 8-20).

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As per claim 21, Witte discloses *a disaster recovery system comprising: a primary file server at an active site; and a secondary virtual file server at a disaster recovery site remote from the active site, the secondary virtual file server including a collection of files that have been replicated from the primary file server to the disaster recovery site (Witte, col. 11, lines 47-61), the secondary virtual file server needing resources including network interfaces and file system mounts at the disaster recovery site for providing user access at the disaster recovery site (Witte, col. 7, lines 52-31), wherein the disaster recovery system is programmed for responding to a request from a system administrator (Witte, col. 12, line 12, where a system administrator is responsible for setting up the recovery system) by executing the determining methods as described in the previous rejection of claim 1 above, which are rejected under the same grounds when incorporated into this system, which is also disclosed by Witte.*

As per claims 22, 24, 25, 27, and 30, Witte discloses the system from which these dependent claims are derived as shown in the rejection of claim 21. These dependent claims merely provide a system for executing the additional methods of claims 2, 4, 5, 7, and 10, and as such is rejected under the same grounds as applied respectively to claims 2, 4, 5, 7, and 10 above.

As per claim 42, Witte *discloses in a disaster recovery environment including a primary file server at an active site and a secondary virtual file server at a disaster recovery site remote from the active site, the secondary virtual file server needing resources including network interfaces and file system mounts at the disaster recovery site for providing user access at the disaster recovery site, a method comprising:*

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replicating a collection of files from the primary file server to the secondary virtual file server at the disaster recovery site (Witte, col. 12, lines 1-6, where the SnapMirror facility replicates a collection of files), and operating the disaster recovery site without sufficient resources on the disaster recovery site to ensure full user access at the disaster recovery site to the secondary virtual file server (Witte, col. 12, lines 7-18, where the secondary site operates without sufficient resources for full user access during the SnapMirror operation because its associated network interfaces are not properly instantiated for full user access); and then

before switching user access over from the primary file server at the active site to the secondary virtual file server at the disaster recovery site, determining whether there are sufficient network interfaces and file system mounts at the disaster recovery site for the secondary virtual file server for providing user access at the disaster recovery site (Witte, col. 7, lines 47-51, where the backup filer acts as the virtual secondary file server, and col. 7, lines 52-60, where the created backup has reserved interfaces and storage, which is functionally equivalent to file system mounts, the reservation inherently showing determination that sufficient resources exist since the backup system was created to allow seamless failover from the primary, with the secondary assuming the primary's identity, col. 12, lines 22-30); and upon finding that there are sufficient network interfaces and file system mounts at the disaster recovery site for the secondary virtual file server for providing user access at the disaster recovery site, reserving the network interfaces and file system mounts that are needed at the disaster recovery site for providing user access at the disaster recovery site (Witte, col. 8, lines 19-25, where

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the reserving of interfaces and mounts occurs to maintain client access during disaster recovery); *and then*

switching user access over from the primary file server at the active site to the secondary virtual file server at the disaster recovery site (Witte, col. 12, lines 22-54, where the backup filer assumes the identity of the primary to allow for client user access).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3, 23, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witte in view of Harper et al., United States Patent number 6,629,266, filed November 17, 1999.

As per claim 3, Witte further discloses *the method as claimed in claim 1, which is performed when it is desired to perform a configuration change of the primary file server at the active site ..., and which includes performing a configuration change of the primary file server at the active site ... after reserving the network interfaces and file system mounts that are needed at the disaster recovery site for providing user access at the disaster recovery site once the configuration change of the primary file server at the active site has been performed* (Witte, col. 12, lines 23-40, where the primary network configuration is changed once backup is created, which includes any reservations; this configuration change will allow user access to the backup, col. 12, 34-35). Witte fails to

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disclose that the performing of a configuration change would occur before switching user access over from the primary file server to the secondary virtual file server.

Harper discloses performing a configuration change on a primary node before switching over to a secondary node (Harper, col. 8, lines 11-16, where the graceful shutdown in a configuration change to the primary node).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the configuration change prior to switchover of Harper in the invention of Witte.

This would have been obvious because Witte discloses a desire to provide a seamless transition (Witte, col. 12, lines 22-54) when having a failure or planned data migration (Witte, col. 12, lines 7-10). Harper obviously furthers these desires by gracefully shutting down the operations of the primary in anticipation of the secondary taking over (Harper, col. 8, lines 11-16). This obviously benefits Witte by ensuring that the software is properly prepared for the switchover and that no file server errors are caused by the abrupt change between the primary and secondary file servers.

As per claim 23, Witte discloses the system from which this dependent claim is derived as shown in the rejection of claim 21. This dependent claim merely provides a system for executing the additional method of claim 3, and as such is rejected under the same grounds as applied to claim 3 above.

As per claim 43, Witte discloses the system from which this dependent claim is derived as shown in the rejection of claim 42. This dependent claim merely provides a system for executing the additional method of claim 3, and as such is rejected under the same grounds as applied to claim 3 above.

Claims 8, 9, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Witte in view of Olson et al., United States Patent number 7, 069,468, filed June 28, 2002.

As per claim 8, Witte discloses *the method as claimed in claim 1, wherein a network client accessing the primary file server at the active site detects a failure of the primary file server to respond to a file access request* (Witte, col. 12, lines 7-18, where the administrator is the detecting network client) and in response to this detecting *the network client redirects the file access request to the disaster recovery site* (Witte, col. 12, lines 22-35). Witte fails to disclose this detection occurring due to a lack of timely response.

Olson discloses detecting a failure due to lack of a timely response (Olson, col. 23, lines 48-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the timer of Olson in the methods of Witte.

This would have been obvious because Witte discloses an ability to detect the failure of the primary system (Witte, col. 12, lines 7-8), but fails to detail how such a detection might occur. Olson provides an obvious method for monitoring the health of a process, such as the filer of Witte (Olson, col. 23, lines 47-55), which would satisfy this deficiency of a detection method in Witte.

As per claim 9, Witte and Olson further disclose *the method as claimed in claim 8, wherein the network client accesses the primary file server using a CIFS connection* (Witte, col. 8, lines 15-16), *and the network client detects the failure of the primary file*

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server to respond to the file access request in a timely fashion (Olson, col. 23, lines 47-55) and redirects the file access request to the disaster recovery site without terminating the CIFS connection (Witte, col. 12, lines 40-54, where the user transparency of the live state shows that the connection is not terminated, merely transferred).

As per claim 28, Witte discloses *the system as claimed in claim 21, which includes a network client programmed to detect a failure of the primary file server to respond to a file access request (Witte, col. 12, lines 7-18, where the administrator is the detecting network client) and in response to this detecting the network client is programmed to redirect the file access request to the disaster recovery site (Witte, col. 12, lines 22-35). Witte fails to disclose this detection occurring due to a lack of timely response.*

Olson discloses detecting a failure due to lack of a timely response (Olson, col. 23, lines 48-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the timer of Olson in the methods of Witte.

This would have been obvious because Witte discloses an ability to detect the failure of the primary system (Witte, col. 12, lines 7-8), but fails to detail how such a detection might occur. Olson provides an obvious method for monitoring the health of a process, such as the filer of Witte (Olson, col. 23, lines 47-55), which would satisfy this deficiency of a detection method in Witte.

As per claim 29, Witte and Olson further disclose *the system as claimed in claim 28, wherein the network client is programmed for accessing the primary file server using*

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a CIFS connection (Witte, col. 8, lines 15-16), and for detecting the failure of the primary file server to respond to the file access request in a timely fashion (Olson, col. 23, lines 47-55) and redirecting the file access request to the disaster recovery site without terminating the CIFS connection (Witte, col. 12, lines 40-54, where the user transparency of the live state shows that the connection is not terminated, merely transferred).

Allowable Subject Matter

Claims 6, 11-14, 26, and 31-33 are allowable for the reasons discussed in the previous office action.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure is provided on form PTO-892.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joshua A. Lohn whose telephone number is (571) 272-3661. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Baderman can be reached on (571) 272-3644. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Joshua A Lohn
Patent Examiner
Art Unit 2114